

The testing constituted physical and chemical treatments for controlling turbidity. The physical treatments tested included two types of porous baffles and a bottom inlet level spreader (BILS). The two types of baffles tested were: (i) coir baffles with thread diameter of 4.0 mm and OSF of 0.45 (fig. 3) and (ii) Pyramat (Propex Inc., Chattanooga, TN) baffles with thread diameter of 1.0 mm and OSF of 0.1 (fig. 4). The open space fraction of the baffles was determined by image analysis using ArcView GIS v.3.2 (ESRI, Redlands, CA). The BILS was an impervious geotextile installed to have 40 mm open space between lower end of fabric and basin bottom (fig.2). The BILS was included to determine if spreading the flow across the basin bottom could enhance settling by reducing the distance particles needed to fall. Three baffles in the basin were installed at 2.2, 3.6 and 4.9 m from the entrance. The position of the baffles coincided with the location of sampler intakes in the basin. The baffles were 0.8 m tall and were spread across the entire cross sectional width of the basin. The chemical treatment included dosing with PAM by directing the pumped, turbid water over a solid PAM block (Floc Log APS 706b, Applied Polymer Systems, Woodstock, GA) installed at the basin inlet. The PAM block was a proprietary mixture of medium and high molecular weight anionic polyacrylamide, certified by North Carolina Department of Environment and Natural Resources (NC DENR) for storm water treatment. The PAM release rate was estimated by the manufacturer to be  $2.1 \text{ mg L}^{-1}$  at pumping rates similar to the one used in this study. The PAM block was covered with galvanized hardware cloth (wire diameter = 1.6 mm) with  $100 \text{ mm}^2$  openings to avoid disintegration as the water was discharged from the pump hose. The control treatment constituted an open basin with no chemical treatment of the pumped water.

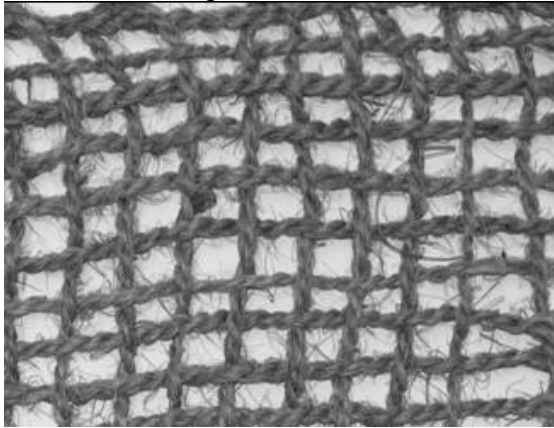


Figure 2-3. Example of the coir netting used as the first type of baffles.

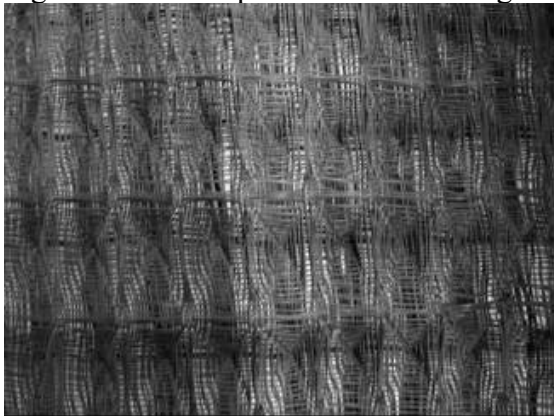


Figure 2-4. Example of the Pyramat erosion control blanket used as the second type of baffle.